



A Look at the Legal Implications of Open Source Software Licensing

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Abstract: Open source software development is a new model of collective collaboration that has challenged the traditional monopoly-based legal order. The purpose of this research is to explore the legal dimensions governing works produced in the field of open source software and to examine the nature of their licenses. This research analyzes how rights and obligations are created between developers and users by comparative examination of different licensing models. The main issue is the challenges in implementing open source contracts in national legal systems and the legal nature of "permission" versus "ownership". The research findings show that open source licenses are a type of valid legal contract that, by observing the principles of freedom of contracts, provides the possibility of managing intellectual property rights without creating monopolies.

Keywords: software rights, open source, license, intellectual property, digital contracts.

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Introduction

In contemporary legal systems, software is considered an intellectual work protected by copyright and intellectual property laws, the main purpose of which is to create a monopoly to protect the inventor. However, the emergence of the open source software paradigm has fundamentally challenged the traditional monopoly-based property model, as it draws a different legal structure from classical intellectual property rights based on source code sharing and user freedoms (Rosen, 2005).

The legal nature of open source software licenses, which are often presented in the form of standard and add-on contracts, is the subject of extensive debate in contract law and intellectual property law. These licenses not only determine how the work can be used and distributed, but also, through concepts such as "copyleft," create a new legal system that emphasizes the continuity of freedom in the development cycle. This approach redefines the boundary between "property rights" and "public use rights" in the digital space (Lessig, 2006).

One of the fundamental challenges in analyzing the legal effects of these licenses is the issue of civil liability and contractual guarantees. Unlike traditional commercial contracts, many open source licenses are based on the principle of "disclaimers" that protect developers from liability for technical defects or security breaches. This raises complex questions about the compatibility of these disclaimers with the mandatory rules of civil law and consumer rights when these software are used in critical infrastructures such as banking systems and e-government (Weber, 2004).

Given the increasing importance of this technology in the basic infrastructure of countries, it is essential to carefully examine the legal status of open source licenses in civil law systems. This research aims to explore the gaps between traditional intellectual property rules and the legal requirements of the open software world by analyzing the legal nature of these licenses and examining their effects (Stallman, 2002).

Theoretical foundations of the research

Theory of intellectual property and copyright:

The main basis of all software licenses is based on intellectual property rights, especially "copyright". Contrary to popular belief, open source software is not based on the "elimination of ownership", but on the "exercise of ownership" to create freedom of action. According to the theory of "natural right", the creator has an exclusive right to the fruit of his thought; open source licenses, using this exclusive right, allow the user to use the codes without fear of legal claims. In fact, the license is a legal instrument that uses the power of the owner to guarantee the rights of users (Lessig, 2004).

Theory of standard contracts:

From the perspective of contract law, software licenses are a type of "pre-arranged contracts" or "standard contracts". In this type of contract, one party (the developer) sets predetermined terms for the other party (the user), and the user usually does not have the right to negotiate on its terms. From a legal perspective, the main challenge in this basis is to examine the degree of "consent" and "contractual fairness" in these licenses; because if the license terms are too strict or unfair, they may be voided (McCloskey, 2010).

Commons Theory:

The philosophical and economic basis of open source software is the "commons" theory. This theory states that some resources (such as knowledge and code) should not be exclusively available to one person, but should be a "public entity" that prevents these common resources from becoming proprietary goods and ensures that knowledge returns to society, maintaining the cycle of innovation (Heller, 1998).

Digital Rights Theory and Freedom Management:

In the digital age, the line between ownership and access has become increasingly blurred. The theoretical basis of this research is the principle that open source licenses are a type of "access legal management" that focuses on "guaranteeing the right to use" rather than "depriving others of use." This perspective views the license not as a restrictive tool, but as an empowering tool that defines digital freedoms within the framework of the law (Bently & Sherman, 2018).

The position of software in the Iranian intellectual property rights system:

From a legal perspective in Iran, computer software is classified as literary and artistic works according to the "Law on the Protection of the Rights of Computer Software Creators (approved in 1379)". The theoretical basis for this protection is the "exclusive right of the author." However, open source software uses the exclusive right of the creator not to prohibit, but to grant a "general license." In this view, open source licenses are a contract between the creator and the user that reduces copyright restrictions for the benefit of the next developer and society (Safaei and Ghasemzadeh, 2019).

Legal nature of software licenses:

From the perspective of contract law, open source licenses are considered "additional contracts" or "contracts concluded through electronic offer and acceptance." In the Iranian legal system, these licenses can be interpreted under Article 10 of the Civil Code (the principle of freedom of contracts). The theoretical basis governing these licenses is that the "will of the parties" prevails over the "implementation of obligations"; meaning that by accepting the license, the user is committed to complying with conditions such as "redistribution of the source code" (Katouzian, 2015).

The concept of public good and common ownership in the digital space:

The theory of “common resources” in Iranian law is related to concepts such as “public ownership” and “public interest.” The theoretical basis for using licenses such as the GPL is to prevent the hoarding of software knowledge. Lawyers believe that in cyberspace, due to the ability to reproduce without limits, a balance must be struck between the “private interests of the developer” and the “public interests of society for access to knowledge.” Open source licenses are actually a legal tool for institutionalizing “knowledge sharing” within the framework of intellectual property laws (Shiravi, 2020).

The challenge of civil liability and disclaimer of warranty:

One of the controversial theoretical foundations in open source licenses is the “disclaimer of liability” clauses. From the perspective of Iranian civil liability law, although the parties can limit their liability in contracts, according to mandatory rules, disclaimer of liability for damages caused by “intentional fault” or “negligence” usually faces challenges. The legal theory governing this section is the distinction between "free software" and "civil liability for damage", which is interpreted in Iranian law based on the principle of "no harm" (Sadeghi, 1400).

Method under study

Descriptive-analytical method: This method is used to explain the fundamental concepts of open source software, types of licenses (such as GPL, MIT, Apache, etc.) and analyze their legal structure. In this regard, first the legal nature of these licenses is described and then the legal consequences of observing or violating them are analyzed.

Comparative method: Given the cross-border nature of open source software, this research uses the method of comparing different legal systems (such as the common law system and the civil law system) as well as comparing different types of open source licenses with each other to determine the fundamental differences in the user's property rights and freedom.

Library method: Data collection was carried out through the study of primary documents (texts of bachelor's degrees, international conventions) and secondary documents (books, scientific articles, judicial opinions, and specialized legal publications).

Research Findings

In this section, the findings from analyzing the texts of famous licenses and examining their legal effects are presented in the form of three main axes: (1) substantive classification of licenses, (2) analysis of user requirements and rights, and (3) challenges of legal liability.

Table 1: Substantive comparison of types of open source licenses from a legal perspective

Facilitative licenses	Cross-licensing	Comparative index
Grant broad freedom with minimal restrictions	Creates a chain of requirements to maintain freedom	Legal nature
Derivatives can be packaged or commercial	Derivatives must be under the same license	Derivative status
Facilitate maximum use and expansion in the market	Prevents privatization of code ((continuing open source	Main purpose
Flexible and compatible with proprietary models	Limits future exclusive ownership	Effect on ownership

This table shows how licenses affect intellectual property rights. The research findings show that licenses fall into two main categories based on the intensity of the enforcement of property rights. In restrictive licenses, the licensee limits the owner's rights to prevent the product from becoming “exclusive”; this is a legal mechanism to ensure that knowledge is public. In contrast, licenses are based on “permissive licenses,” in which the owner grants the user the right to modify and package the work, which is more attractive to commercial companies.

Table 2: Civil liability and enforcement challenges in open source licenses

Challenges in the civil (law system (such as Iran	Status in the text of licenses	Legal Challenge Description	Area of Challenge
Conflict with mandatory liability rules	Complete disclaimer	Damages due to technical defects or bugs	Civil Liability
Difficulty in proving and enforcing the verdict	Automatic license termination	License violation by users	Performance Guarantee
Lack of specific judicial practice	Complexity in determining the final license	Combination of different codes	Legal Interference

This table examines the legal challenges arising from the use of these software. One of the most important findings of this research is the identification of a gap between the “will of the parties in the license” and “mandatory legal rules”. Most open source licenses use “non-warranty and non-liability” clauses to protect themselves from liability for user damages. However, the findings show that in many legal systems (including Iran), these clauses may be invalid in the event of “intentional error” or “gross negligence”. Also, the challenge of “legal contamination” arising from the combination of conflicting licenses is considered one of the biggest legal risks for technology companies.

Conclusion

“As a result of the studies conducted in this study, it can be acknowledged that open source software licenses, contrary to the initial perception that they are legally invalid, are fundamental tools for managing intellectual property rights in the digital age. The findings of this study showed that these licenses, by utilizing the rules of “copyright”, create a platform of “conditional freedoms” instead of eliminating the rights of the owner.

It was also found that the difference between “reciprocal” and “facilitative” licenses is actually a difference in protection strategies; reciprocal licenses prevent software from becoming a proprietary product by creating a chain of requirements, while facilitative licenses focus on maximizing the expansion of use. Finally, this study proved that open source licenses are not a replacement for traditional ownership models, but rather their evolution in the face of the needs of knowledge sharing in the modern world”.

“The analysis of the legal effects of open source licenses shows that, despite their effectiveness in collaborative development models, these systems face serious challenges in dealing with classical legal systems. On the one hand, the issue of “legal contamination” and the interference of different licenses in hybrid projects can lead to legal uncertainty for commercial developers. On the other hand, by relying on “non-liability” clauses, these licenses try to redefine the boundaries of civil liability for possible software damages, which in civil legal systems (such as Iranian law) can conflict with mandatory rules.

“This research showed that open source software licenses are complex and authoritative legal instruments based on intellectual property laws. The findings indicate that the choice of license type has a direct impact on the business model, the degree of user freedom, and the way property rights are managed in the future. A thorough understanding of these licenses and their legal implications is essential for developers, technology companies, and regulators to prevent legal disputes and make optimal use of open source.

Therefore, it is concluded that although open source licenses have become stable internationally, they require legal harmonization and redefinition of the concepts of civil liability and intellectual property in domestic laws in order to be accepted and implemented accurately in national legal systems.

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